



# New Mexico State Investment Council

## **Severance Tax Permanent Fund Analysis**

*Investments and Pensions Oversight Committee Meeting*

*December 2, 2011*

# Contributions and the Severance Tax Permanent Fund

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Presented on the next few pages is a model designed to help analyze the impact of contributions to the Severance Tax Permanent Fund.

- Key Assumptions:

- Statutory Distribution – remains at the current 4.7% of the average trailing 5-year balance of the fund.
- Contribution Rate – this is a variable of the model, and is defined as a percentage of total gross tax receipts. Estimates of gross tax receipts for fiscal years 2012-2015 are sourced from the New Mexico Dept of Finance and Administration (DFA) and the Fiscal Strategies Group (FSG); estimates for fiscal years 2016-2031 are made by growing DFA/FSG's estimate for 2015 by the assumed rate of inflation.
- Rate of Inflation -- assumed at 2.5% per annum.
- Investment Return – targeted at 7.5% per annum, on average.

- Key Take-a-Ways of the Analysis:

- The “status quo” of contributing roughly 5% of gross severance tax receipts to the fund essentially leaves the fund stalled in terms of purchasing power. That is, under the assumptions used in the modeling process, the STPF will experience no growth in the “real” value of the fund, and consequently the fund stands significant risk of erosion of purchasing power if current inflation assumptions turn out to be too low.
- A small change in the contribution rate has only a small impact on protection of the fund. Moving the contribution rate from 5% of gross severance tax receipts to 10% of gross severance tax receipts only marginally improves the purchasing power protection of the fund.
- Restoring the contribution rate to the original 50% of gross severance tax receipts from the current 5% over the next 20 years, however, materially improves the outlook for the fund. A measured move to 50% contribution over the next 20 years provides for an estimated 5.01% rate of growth in the balance of the fund – a rate that will very likely exceed inflation over the period. This protects the fund from the effects of inflation, and opens the opportunity to add a small measure of real growth in the purchasing power of the fund.
- Dollars in the fund are expected to compound at a 7.5% rate from the investments of the fund. For this reason, dollars not deposited into the fund, or spent from the fund, are “expensive” to use.

# Model #1: “The Status Quo”

Future Assumptions:

Statutory Distribution	4.70%
Contribution Rate	5.00%
Inflation	2.50%
Investment Return	7.50%

Growth Rate 2012-2031: **3.37%**

Fiscal Years	Beginning Value	Total Severance Tax Receipts	Percent Contributed	Severance Tax Contribution (C * D)	Investment Return	Statutory Distribution	Ending Value
2002	3,862.3	230.5	13.9%	32.0	(332.2)	(159.2)	3,402.9
2003	3,402.9	237.6	0.0%	0.0	90.4	(171.0)	3,322.3
2004	3,322.3	305.6	5.3%	16.3	465.0	(172.4)	3,631.2
2005	3,631.2	391.6	3.1%	12.3	310.1	(173.2)	3,780.4
2006	3,780.4	497.3	24.8%	123.2	417.9	(171.8)	4,149.7
2007	4,149.7	452.9	5.3%	24.0	705.6	(170.9)	4,708.4
2008	4,708.4	511.8	8.1%	41.4	(209.5)	(171.9)	4,368.4
2009	4,368.4	516.3	5.8%	30.1	(1,033.6)	(184.2)	3,180.7
2010	3,180.7	350.1	1.0%	3.4	376.8	(194.0)	3,366.9
2011	3,366.9	366.7	2.1%	7.6	756.1	(189.8)	3,940.8
2012E	3,940.8	396.7	5.0%	19.8	252.5	(185.9)	4,027.3
2013E	4,027.3	407.6	5.0%	20.4	295.6	(183.9)	4,159.3
2014E	4,159.3	412.7	5.0%	20.6	302.0	(177.5)	4,304.5
2015E	4,304.5	407.4	5.0%	20.4	311.9	(175.5)	4,461.2
2016E	4,461.2	400.6	5.0%	20.0	322.8	(186.1)	4,618.0
2017E	4,618.0	417.1	5.0%	20.9	334.6	(196.4)	4,777.1
2018E	4,777.1	427.5	5.0%	21.4	346.4	(202.8)	4,942.0
2019E	4,942.0	438.2	5.0%	21.9	358.3	(209.8)	5,112.4
2020E	5,112.4	449.1	5.0%	22.5	370.7	(217.2)	5,288.3
2021E	5,288.3	460.4	5.0%	23.0	383.4	(224.8)	5,470.0
2022E	5,470.0	471.9	5.0%	23.6	396.6	(232.5)	5,657.7
2023E	5,657.7	483.7	5.0%	24.2	410.3	(240.5)	5,851.6
2024E	5,851.6	495.8	5.0%	24.8	424.3	(248.8)	6,051.9
2025E	6,051.9	508.2	5.0%	25.4	438.9	(257.4)	6,258.8
2028E	6,258.8	520.9	5.0%	26.0	453.9	(266.2)	6,472.5
2027E	6,472.5	533.9	5.0%	26.7	469.4	(275.3)	6,693.3
2028E	6,693.3	547.2	5.0%	27.4	485.4	(284.8)	6,921.4
2029E	6,921.4	560.9	5.0%	28.0	502.0	(294.5)	7,156.9
2030E	7,156.9	574.9	5.0%	28.7	519.1	(304.5)	7,400.2
2031E	7,400.2	589.3	5.0%	29.5	536.8	(314.9)	7,651.5

## Model #2: “Small Increase”

Future Assumptions:

Statutory Distribution	4.70%
Contribution Rate	10.00%
Inflation	2.50%
Investment Return	7.50%

Growth Rate 2012-2031: 3.80%

Fiscal Years	Beginning Value	Total Severance Tax Receipts	Percent Contributed	Severance Tax Contribution (C * D)	Investment Return	Statutory Distribution	Ending Value
2002	3,862.3	230.5	13.9%	32.0	(332.2)	(159.2)	3,402.9
2003	3,402.9	237.6	0.0%	0.0	90.4	(171.0)	3,322.3
2004	3,322.3	305.6	5.3%	16.3	465.0	(172.4)	3,631.2
2005	3,631.2	391.6	3.1%	12.3	310.1	(173.2)	3,780.4
2006	3,780.4	497.3	24.8%	123.2	417.9	(171.8)	4,149.7
2007	4,149.7	452.9	5.3%	24.0	705.6	(170.9)	4,708.4
2008	4,708.4	511.8	8.1%	41.4	(209.5)	(171.9)	4,368.4
2009	4,368.4	516.3	5.8%	30.1	(1,033.6)	(184.2)	3,180.7
2010	3,180.7	350.1	1.0%	3.4	376.8	(194.0)	3,366.9
2011	3,366.9	366.7	2.1%	7.6	756.1	(189.8)	3,940.8
2012E	3,940.8	396.7	10.0%	39.7	252.5	(185.9)	4,047.1
2013E	4,047.1	407.6	10.0%	40.8	295.6	(183.9)	4,199.5
2014E	4,199.5	412.7	10.0%	41.3	303.5	(177.7)	4,366.6
2015E	4,366.6	407.4	10.0%	40.7	315.0	(176.1)	4,546.2
2016E	4,546.2	400.6	10.0%	40.1	327.5	(187.3)	4,726.5
2017E	4,726.5	417.1	10.0%	41.7	341.0	(198.3)	4,910.9
2018E	4,910.9	427.5	10.0%	42.7	354.5	(205.7)	5,102.4
2019E	5,102.4	438.2	10.0%	43.8	368.3	(213.8)	5,300.6
2020E	5,300.6	449.1	10.0%	44.9	382.7	(222.3)	5,505.9
2021E	5,505.9	460.4	10.0%	46.0	397.5	(231.1)	5,718.4
2022E	5,718.4	471.9	10.0%	47.2	412.9	(240.1)	5,938.4
2023E	5,938.4	483.7	10.0%	48.4	428.9	(249.5)	6,166.2
2024E	6,166.2	495.8	10.0%	49.6	445.4	(259.1)	6,402.0
2025E	6,402.0	508.2	10.0%	50.8	462.5	(269.1)	6,646.2
2028E	6,646.2	520.9	10.0%	52.1	480.1	(279.5)	6,898.9
2027E	6,898.9	533.9	10.0%	53.4	498.5	(290.2)	7,160.6
2028E	7,160.6	547.2	10.0%	54.7	517.4	(301.3)	7,431.4
2029E	7,431.4	560.9	10.0%	56.1	537.0	(312.8)	7,711.8
2030E	7,711.8	574.9	10.0%	57.5	557.4	(324.7)	8,002.0
2031E	8,002.0	589.3	10.0%	58.9	578.4	(337.0)	8,302.3

## Model #3: “Restoration”

Future Assumptions:

Statutory Distribution	4.70%	
Contribution Rate	5.00%	2.37%
Inflation	2.50%	
Investment Return	7.50%	

Growth Rate 2012-2031:

**5.01%**

Fiscal Years	Beginning Value	Total Severance Tax Receipts	Percent Contributed	Severance Tax Contribution (C * D)	Investment Return	Statutory Distribution	Ending Value
2002	3,862.3	230.5	13.9%	32.0	(332.2)	(159.2)	3,402.9
2003	3,402.9	237.6	0.0%	0.0	90.4	(171.0)	3,322.3
2004	3,322.3	305.6	5.3%	16.3	465.0	(172.4)	3,631.2
2005	3,631.2	391.6	3.1%	12.3	310.1	(173.2)	3,780.4
2006	3,780.4	497.3	24.8%	123.2	417.9	(171.8)	4,149.7
2007	4,149.7	452.9	5.3%	24.0	705.6	(170.9)	4,708.4
2008	4,708.4	511.8	8.1%	41.4	(209.5)	(171.9)	4,368.4
2009	4,368.4	516.3	5.8%	30.1	(1,033.6)	(184.2)	3,180.7
2010	3,180.7	350.1	1.0%	3.4	376.8	(194.0)	3,366.9
2011	3,366.9	366.7	2.1%	7.6	756.1	(189.8)	3,940.8
2012E	3,940.8	396.7	5.0%	19.8	252.5	(185.9)	4,027.3
2013E	4,027.3	407.6	7.4%	30.0	295.6	(183.9)	4,169.0
2014E	4,169.0	412.7	9.7%	40.2	302.0	(177.5)	4,333.7
2015E	4,333.7	407.4	12.1%	49.3	312.7	(175.6)	4,520.0
2016E	4,520.0	400.6	14.5%	58.0	325.0	(186.5)	4,716.6
2017E	4,716.6	417.1	16.8%	70.2	339.0	(197.3)	4,928.5
2018E	4,928.5	427.5	19.2%	82.1	353.7	(204.6)	5,159.8
2019E	5,159.8	438.2	21.6%	94.6	369.6	(213.1)	5,410.9
2020E	5,410.9	449.1	23.9%	107.6	387.0	(222.4)	5,683.0
2021E	5,683.0	460.4	26.3%	121.2	405.8	(232.5)	5,977.5
2022E	5,977.5	471.9	28.7%	135.4	426.2	(243.4)	6,295.6
2023E	6,295.6	483.7	31.1%	150.2	448.3	(255.3)	6,638.8
2024E	6,638.8	495.8	33.4%	165.7	472.2	(268.2)	7,008.5
2025E	7,008.5	508.2	35.8%	181.9	497.9	(282.1)	7,406.2
2028E	7,406.2	520.9	38.2%	198.8	525.6	(297.1)	7,833.6
2027E	7,833.6	533.9	40.5%	216.4	555.5	(313.3)	8,292.1
2028E	8,292.1	547.2	42.9%	234.7	587.5	(330.7)	8,783.7
2029E	8,783.7	560.9	45.3%	253.9	621.9	(349.5)	9,310.0
2030E	9,310.0	574.9	47.6%	273.9	658.8	(369.6)	9,873.0
2031E	9,873.0	589.3	50.0%	294.7	698.2	(391.3)	10,474.6

## Model #4: “Fix-It-Now”

Future Assumptions:

Statutory Distribution	4.70%	
Contribution Rate	5.00%	5.00%
Inflation	2.50%	
Investment Return	7.50%	

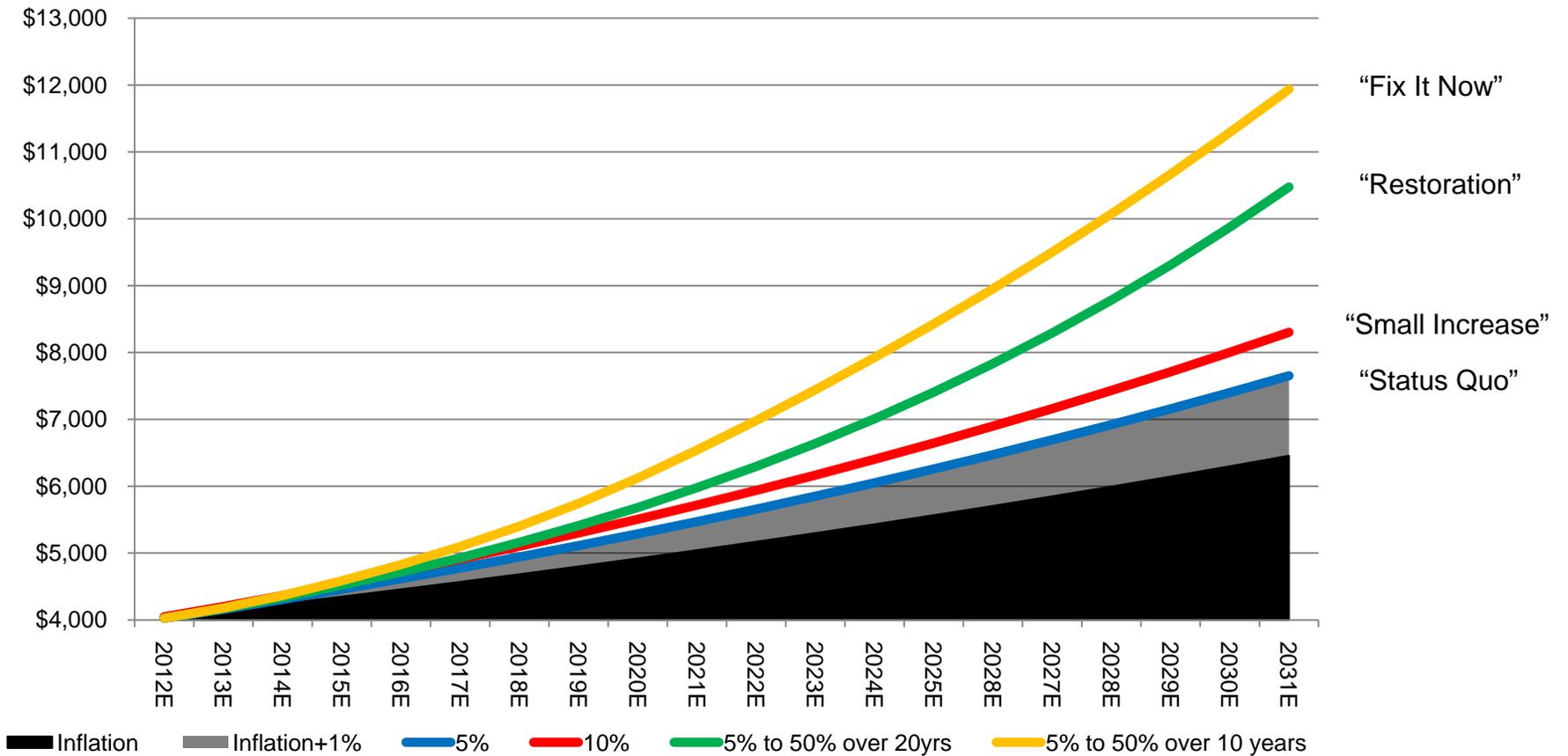
Growth Rate 2012-2031:

**5.70%**

Fiscal Years	Beginning Value	Total Severance Tax Receipts	Percent Contributed	Severance Tax Contribution (C * D)	Investment Return	Statutory Distribution	Ending Value
2002	3,862.3	230.5	13.9%	32.0	(332.2)	(159.2)	3,402.9
2003	3,402.9	237.6	0.0%	0.0	90.4	(171.0)	3,322.3
2004	3,322.3	305.6	5.3%	16.3	465.0	(172.4)	3,631.2
2005	3,631.2	391.6	3.1%	12.3	310.1	(173.2)	3,780.4
2006	3,780.4	497.3	24.8%	123.2	417.9	(171.8)	4,149.7
2007	4,149.7	452.9	5.3%	24.0	705.6	(170.9)	4,708.4
2008	4,708.4	511.8	8.1%	41.4	(209.5)	(171.9)	4,368.4
2009	4,368.4	516.3	5.8%	30.1	(1,033.6)	(184.2)	3,180.7
2010	3,180.7	350.1	1.0%	3.4	376.8	(194.0)	3,366.9
2011	3,366.9	366.7	2.1%	7.6	756.1	(189.8)	3,940.8
2012E	3,940.8	396.7	5.0%	19.8	252.5	(185.9)	4,027.3
2013E	4,027.3	407.6	10.0%	40.8	295.6	(183.9)	4,179.7
2014E	4,179.7	412.7	15.0%	61.9	302.0	(177.5)	4,366.1
2015E	4,366.1	407.4	20.0%	81.5	313.5	(175.7)	4,585.3
2016E	4,585.3	400.6	25.0%	100.2	327.5	(186.9)	4,826.1
2017E	4,826.1	417.1	30.0%	125.1	343.9	(198.3)	5,096.8
2018E	5,096.8	427.5	35.0%	149.6	362.0	(206.7)	5,401.7
2019E	5,401.7	438.2	40.0%	175.3	382.3	(216.7)	5,742.5
2020E	5,742.5	449.1	45.0%	202.1	405.1	(228.2)	6,121.6
2021E	6,121.6	460.4	50.0%	230.2	430.7	(241.1)	6,541.3
2022E	6,541.3	471.9	50.0%	235.9	459.1	(255.6)	6,980.8
2023E	6,980.8	483.7	50.0%	241.8	490.6	(271.7)	7,441.5
2024E	7,441.5	495.8	50.0%	247.9	523.6	(289.4)	7,923.6
2025E	7,923.6	508.2	50.0%	254.1	558.1	(308.6)	8,427.2
2028E	8,427.2	520.9	50.0%	260.4	594.3	(329.1)	8,952.8
2027E	8,952.8	533.9	50.0%	266.9	632.0	(350.8)	9,501.0
2028E	9,501.0	547.2	50.0%	273.6	671.5	(373.4)	10,072.7
2029E	10,072.7	560.9	50.0%	280.5	712.6	(397.1)	10,668.6
2030E	10,668.6	574.9	50.0%	287.5	755.5	(421.8)	11,289.7
2031E	11,289.7	589.3	50.0%	294.7	800.1	(447.6)	11,936.8

# Graphical View: Fund Values Over Time

## Fund Values Under the Four Models (\$ Millions)



# Graphical View: Fund Values Over Time

## Annual Distribution Under the Four Models (\$ Millions)

